CLAIMS:

1. A pulse forming network device comprising:

two pulse forming networks, a first pulse forming network comprising n sections, n being an integer, and a second pulse forming network comprising m sections, m being an integer, each of the sections of the first and the second pulse forming networks comprising at least one capacitor and at least one inductor, and each pulse forming network having one output port for connecting a load, the two pulse forming networks electrically connected and magnetically coupled back to back.

2. The device of claim 1, wherein n and m are equal.
3. The device of claim 1, wherein the sections in each pulse forming network are identical.
4. The device of claim 1, wherein adjacent sections are magnetically coupled.
5. The device of claim 4, wherein adjacent sections are magnetically coupled in the same polarity.
6. The device of claim 4, wherein adjacent sections are magnetically coupled in the same magnitude.
7. The device of claim 1, wherein the output ports are impedance-matched to the loads.
8. The device of claim 1, wherein a coil having m+n-1 taps is used for magnetically coupling the two pulse forming networks, and wherein portions of the coil between the taps define the inductors of the sections.
9. The device of claim 8, wherein the coil comprises unidirectional windings.
10. The device of claim 1, wherein the magnetic coupling is achieved by positioning coils in close proximity to each other.

11. The device of claim 1 incorporated in a pulse generator which also comprises:

a charging power supply for charging and storing electrical energy in the capacitors and,

two closing switches, connected to the two output ports, each in series with an appropriate load,

whereby triggering of the two closing switches simultaneously results in an electrical pulse discharged through each of the two loads.

12. The device of claim 11, wherein each switch and the appropriate load make up at least one flashlamp.

13. The device of 12, wherein said at least one flashlampcomprises a plurality of flashlamps, connected in series.

14. The device of 12, wherein said at least one flashlamp comprises a plurality of flashlamps, connected in parallel.

15. 15. The device of claim 1, incorporated in a system for rapid thermal processing.

16. The device of claim 15, wherein the system for rapid thermal processing is a thermal flash annealing system.

17. A method for generating an electrical pulse comprising:

magnetically coupling of two pulse forming networks which are also electrically connected back-to-back, a first pulse forming network comprising n sections, n being an integer, and a second pulse forming network comprising m sections, m being an integer, each of the sections of the first and the second pulse forming networks comprising at least one capacitor and at least one inductor, and each pulse forming network having one output port for connecting a load.

18. The method of claim 17, further comprising magnetically coupling adjacent sections.

19. The method of claim 17, wherein magnetically coupling of the two pulse forming networks is achieved by using a coil having n+m-1 taps wherein portions of the coil between the taps define the inductors of the sections.

20. The method of claim 17, used in pulse generation, further comprising:

providing a charging power supply for charging and storing electrical energy in the capacitors and, two closing switches, connected to the two output ports, each in series with an appropriate load, and triggering the two closing switches simultaneously.

21. The method of claim 20, wherein each switch and the appropriate load make up at least one flashlamp.

22. The method of claim 17, incorporated in rapid thermal processing.

23. The method of claim 22, incorporated in thermal flash annealing.

24. A method for extinguishing an electrical pulse generated by a pulse generator the pulse being discharged through a load connected to said pulse generator, the method comprising:

providing a first triggered closing switch connected in series with a first resistor, while both of them connected across the load,

triggering the first triggered closing switch when it is desired to extinguish the pulse through the load,

thereby causing the energy of the pulse to discharge also through the first resistor, thus extinguishing or greatly attenuating the energy of the pulse discharged through the load.

25. The method of claim 24, wherein the first closing switch is selected from the group of triggered switches containing: mercury-filled switch, metal

vapor switch, liquid metal switch, semiconductor switch, gas-filled switch, vacuum switch.

26. The method of claim 24, wherein the ratio between the impedance of the load and the resistance of the first resistor substantially greater than 1:1.

27. The method of claim 26, wherein a second closing switch and a second resistor connected in series are provided across at least one of the energy storage capacitors of said pulse generator.

28. The method of claim 27, wherein the second closing switch is a triggered closing switch and is synchronized with the first triggered closing switch.

29. The method of claim 27, wherein the second closing switch is a non-triggered closing switch, which is automatically actuated when the voltage polarity across said at least one energy storage capacitor is inverted.

30. The method of claim 29, wherein the second closing switch is a diode.

31. The method of claim 29, wherein the second closing switch is electrically arranged to behave like a diode.

32. The method of claim 27, wherein the second closing switch is selected from the group of switches containing: mercury-filled switch, metal vapor switch, liquid metal switch, semiconductor switch, gas-filled switch, vacuum switch.

33. The method of claim 24, used in generating a controlled electrical pulse.

34. The method of claim 33, used in generating a controlled rapid thermal processing.

35. The method of claim 34, used in thermal flash annealing.

36. The method of claim 24, wherein the first triggered closing switch is triggered when a predetermined physical condition is reached.

37. The method of claim 34, wherein the predetermined physical condition is temperature of a front surface of a workpiece undergoing rapid thermal processing.

38. An electrical device for extinguishing an electrical pulse generated by a pulse generator, the pulse being discharged through a load connected to said pulse generator, the electrical setup comprising:

a first triggered closing switch connected in series with a first resistor, while both of them connected across the load.

39. The device of claim 38, wherein the first closing switch is selected from the group of triggered switches containing: mercury-filled switch, metal vapor switch, liquid metal switch, semiconductor switch, gas-filled switch, vacuum switch.

40. The device of claim 38, wherein the ratio between the impedance of the load and the resistance of the first resistor is substantially greater than 1:1.

41. The device of claim 40, wherein a second closing switch and a second resistor connected in series are provided across at least one energy storage capacitor of said pulse generator.

42. The device of claim 41, wherein the second closing switch is a triggered closing switch and is synchronized with the first triggered closing switch.

43. The device of claim 41, wherein the second closing switch is a non-triggered closing switch, which is automatically actuated when the voltage polarity across said at least one energy storage capacitor is inverted.

44. The device of claim 43, wherein the second closing switch is a diode.

45. The device of claim 43, wherein the second closing switch is electrically arranged to behave like a diode.

46. The device of claim 43, wherein the second closing switch is selected from the group of switches containing: mercury-filled switch, metal vapor switch, liquid metal switch, semiconductor switch, gas-filled switch, vacuum switch.

47. The device of claim 38, incorporated in a controlled electrical pulse generator.

48. The device of claim 47, incorporated in a controlled rapid thermal processing system.

49. The device of claim 48, incorporated in a thermal flash annealing system.

50. The device of claim 38, wherein the first triggered closing switch is a switch, which is triggered when a predetermined physical condition is reached.

51. The device of claim 50, wherein the predetermined physical condition is temperature of a front surface of a workpiece undergoing rapid thermal processing.